

Václav Blažek
Masaryk University of Brno
blazek@phil.muni.cz

South Cushitic classification in lexicostatistic perspective

Abstract

A purpose of the present study is an evaluation of various models of classification of the South branch of the Cushitic languages. The South Cushitic languages are studied in their narrow sense here, i.e. without Dahalo and Ma'a, although their probable cognates are registered.

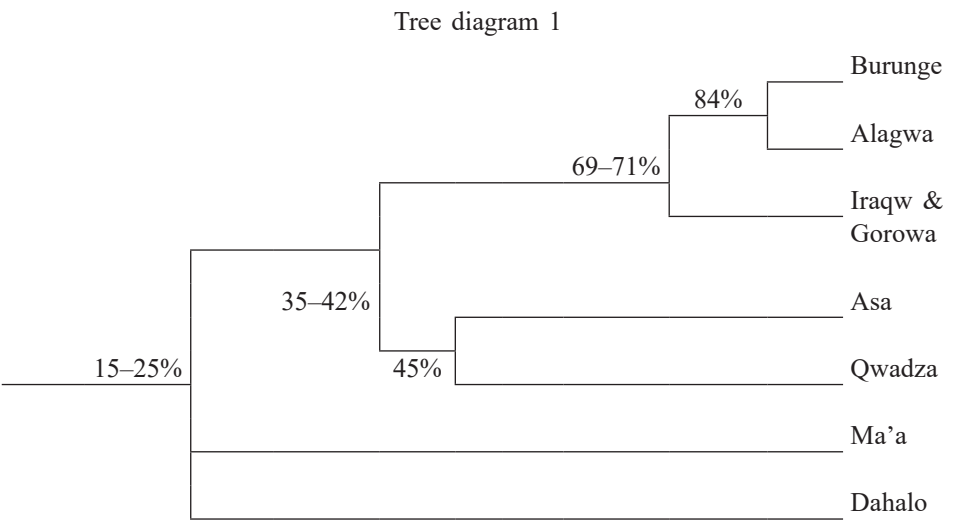
Keywords

South Cushitic, lexicostatistics, glottochronology, internal classification.

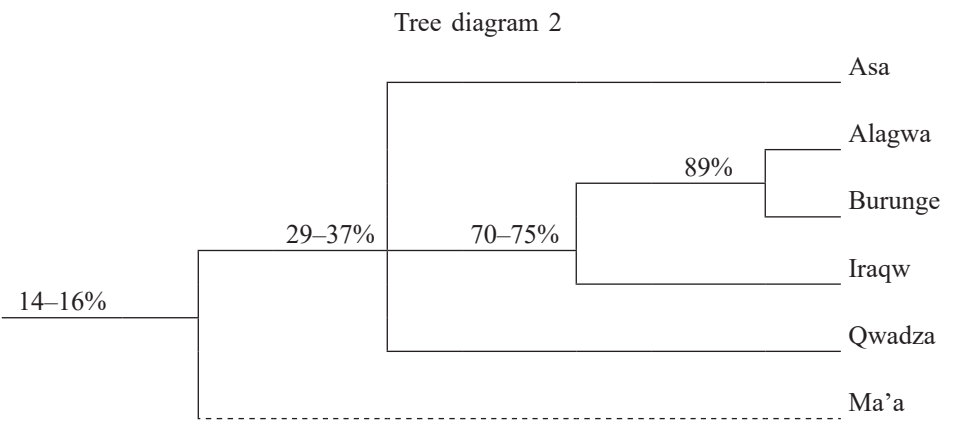
First of all, let us summarize the geographic & demographic circumstances and history of the research in this field. In terms of numbers of speakers, the biggest language, Iraqw, is spoken in Northern Tanzania between the Lakes Eyasi and Manyara. In 1992 Maarten Mous estimated the number of the Iraqw people at 517,000. *Ethnologue*₂₁ (2018) proposes 603,000 (2009). The first records of Iraqw and its closest relatives, Gorowa (113,000 – 2009), Alagwa (53,000 – 2009) and Burunge (28,000 – 2009), were published in the last decade of the 19th century (Baumann 1894). Meinhof (1906) recognized serious cognates between Burunge and Ma'a on the one hand and Somali on the other hand; most of them are still acceptable at the present time. In the appendix to Claus' brief description of Qwadza (Claus 1910: 'Wangomwia') Meinhof convincingly demonstrated a relationship between Qwadza and Burunge. Greenberg's (1963, 49) 'South Cushitic' consists of Iraqw & Gorowa, Burunge, Alagwa, plus Ma'a ('Mbugu') and Dahalo ('Sanye') from Kenya. The ethnic population of Dahalo was estimated at c. 2,400 in 2009, but already in 1992 the number of speakers was c. 400 and now may be totally extinct. In 1960's Fleming and Ehret added another language from Tanzania, Asa (first described by Merker 1904) to South Cushitic.

Its population was around 350 in 1999, the number of at least partial speakers was c. 100 already before 1992 (*Ethnologue*₂₁ 2018).

Fleming and Ehret (Fleming 1969, 17; the figures after Ehret 1980, 15) expressed the genetic relations within South Cushitic as follows in Tree diagram 1:

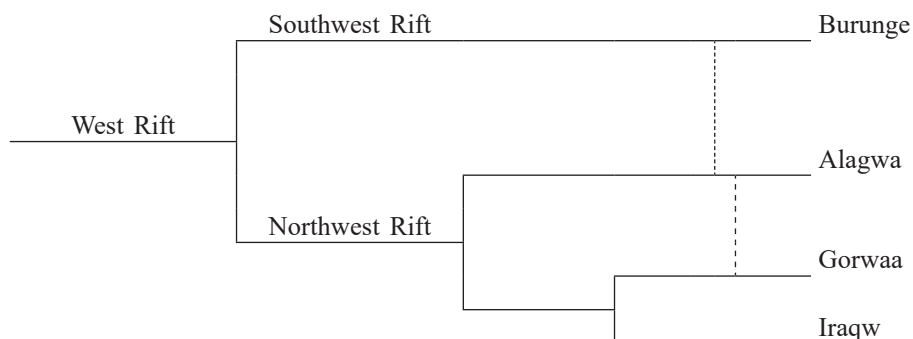


In the later models of the South Cushitic classification projected in Tree diagram 2 Dahalo is excluded (Tosco 1989; Blažek & Tosco 1994; Blažek 1997, 173–174). The special status of Ma’a as a hybrid language with both Bantu and Cushitic features has acquired a new dimension thanks to M. Mous (1995, 2003) who recognized two strata in the Cushitic-like lexicon of Ma’a, namely (i) Iraqwoid; (ii) Oromoid. Consequently Mous rejects the role of Ma’a as an independent South Cushitic branch.



Kießling and Mous offer their alternative classification, based especially on the phonologic and morphologic criteria (Kießling 2002, 19; Kießling & Mous 2003, 1–2), which is depicted in Tree diagram 3:

Tree diagram 3



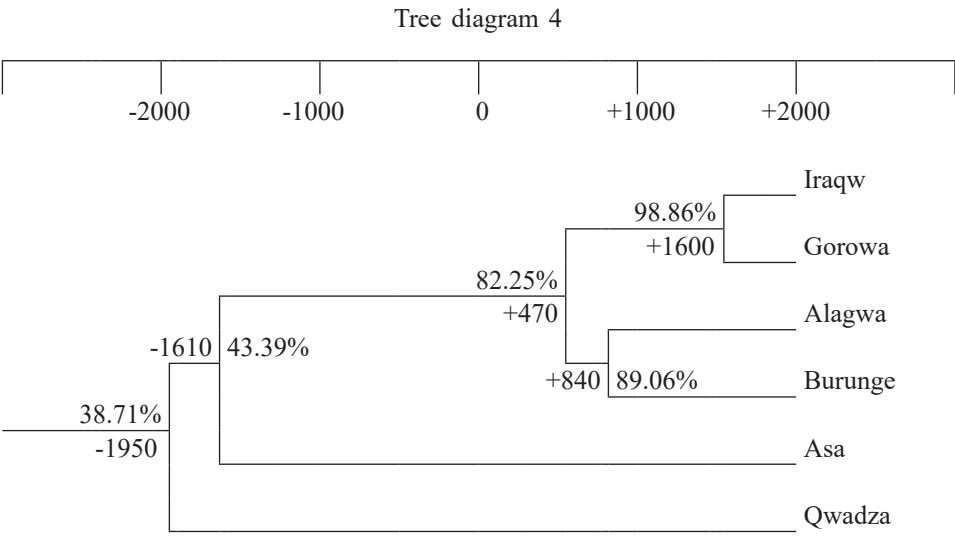
The present study operates exclusively with the lexicostatistical approach. Two 100-word lists were compiled, I & II. They consist of semantic units, chosen according to Swadesh and Bender. Wordlist I summarizes the core lexicon of Iraqw collected by the following authors (with total numbers of lexical units in brackets): Dempwolff 1916–17 (279), Whiteley 1958 (134), Fleming 1965 (105), plus some additions from 1969, Ehret 1980 (100-words-list, plus numerous examples in the text), Maghway 1995 (1,500), Mous, Qorro & Kiessling [MQK] 2002 (3,850). Wordlist II contains the core lexicons of Gorowa, Alagwa, Burunge, Asa, Qwadza. In both wordlists the column ‘etymology’ offers the etymological explanations either from Iraqw proper or on the basis of parallels from other South, East, Central and North (Beja) Cuhitic, occasionally also Omotic, Nilo-Saharan or Khoisan (Sandawe) languages are cited.

The present results may be summarized in Table 1:

Table 1

	Gorowa	Alagwa	Burunge	Asa	Qwadza
Iraqw	87/88 = 0.9886	81/97 = 0.8350	75.5/95 = 0.7947	37/80.5 = 0.4596	32.5/79.5 = 0.4088
Gorowa		77/89 = 0.8652	70/88 = 0.7954	34/81.5 = 0.4172	30/77.5 = 0.3871
Alagwa			85.5/96 = 0.8906	34.5/81.5 = 0.4233	30/79.5 = 0.3774
Burunge				35.5/81.5 = 0.4356	28/78.5 = 0.3569
Asa					30/74 = 0.4054

Applying the standard cladistic procedure and chronological calibration developed by Sergei Starostin in his ‘recalibrated’ modification of glottochronology, it is possible to construct Tree diagram 4:



The figures are more or less coherent, with a single exception – the position of Burunge versus Iraqw & Gorowa, expressed by the percentage 79–80%, in comparison with the relation of Alagwa, the closest relative of Burunge according to present results, to the same Iraqw & Gorowa, expressed by the percentage 83–87%. Applying the dialectometric method, combining the lexicostatistic, phonologic and morphologic approaches, Kießling (2002, 431) has obtained figures, characterized by the same feature, i.e. a significantly lower score of Burunge vs. Iraqw & Gorowa in comparison with the score of Alagwa vs. Iraqw & Gorowa:

Table 2

	Gorowa	Alagwa	Burunge
Iraqw	93.2%	66.6%	57.2%
Gorowa		68.0%	58.0%
Alagwa			77.2%

One possible explanation is the influence of Burunge on Alagwa, called *Burungisierung* by Kießling (2002, 480–82). It is a quite legitimate solution, which should be supported by Burunge borrowings in the Alagwa core lexicon.

Wordlist I: Iraqw

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
1. <i>all</i> ₁					adawa	?ECu: Som aad <i>very</i> , <i>much</i> (EC _{HL} 62)
<i>all</i> ₂	hlemero (F)		hlemero		sleémeeroo	KM 261: *sliima cf. Ir sleemee <i>also</i>
2. <i>ashes</i> ₁	da'ara (F)		daʃara	daʃraa, pl. daʃradu'	daʃara	KM 78: *daʃaraa; cf. ECu *darʃ- id. (EC 16; SC _F 21)
<i>ashes</i> ₂				tumúq <i>hot ash</i>		
3. <i>bark</i>	qafi (F)		qafi	qafi, pl. qafoo <i>peel</i> , <i>membrane</i> , <i>outer skin</i>	qafi, pl. qafoo	KM 228: *qafiya, pl. *qafoo; SC 368; SC _F 21: CCu *qaf- id.
4. <i>belly</i>	guraʃa (D) gura' (F)	gûra, pl. gûr'e <i>stomach</i>	gura	gura', pl. gur'ee	gura', pl. gur'ee	KM 122: *gura'a; SC 239; ECu *gur'- <i>udder</i> (EC _B 86); CCu: Awngi guriaŋɣe <i>navel</i> (Wedekind)
5. <i>big</i> ₁	ur (D) ur (F)	ur, pl. uren	ur		ur, pl. uren <i>big, old</i> , <i>many</i>	KM 309-10: *'ur, cf. *'uraw <i>grow</i> <i>up, become adult</i> ; SC 295: Ma'a uda <i>far</i> ; ?ECu: Bj wod- <i>grow</i> (EC _{HL} 62)
<i>big</i> ₂					pl. dirén <i>big, wide</i>	KM 96: *dir; SC 188: Da dār- <i>increase</i>
6. <i>bird</i>	ʃir'o (F)	tsirʃi, pl. tsirʃo	tsirʃi		tsirʃi, pl. tsirʃoo	KM 299: *tsiraʃa SC 226; ECu: Or ɕirrii, HEC 27: *ɕiida- id.
7. <i>bite</i>	kyɛ (D) kiḥ- (F)		kiḥ-	kiiḥ	kiiḥ	KM 175: *kiḥ; SC 252: Da k'aḥ-
8. <i>black</i>	buɣ, buʃ (D) bōʃə, bor' (F)	boäʃ, pl. bāʃ	boʃa	booʃ	booʃ, pl. boʃ(ayen)	KM 74: *booʃ, pl. *boʃ; SC 388

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
9. <i>blood</i> ₁	ts'əri (D) şere (F)	tséere, pl. tséer'du	tsere	tseeree, pl. tseer(e)du'	tseeree, pl. tseerdu	KM 295: *tseedee; SC 199: Da ts'íraara'e <i>red</i>
<i>blood</i> ₂					fooya	
10. <i>bone</i>	fāra (D) fara (F)	fāra, pl. fādu	fara	fara, pl. fadu'	fara, pl. fadu ^(*)	KM 104-05: *fara, pl. *fararu; SC 150: Ma'a ifwára id.; cf. ECu: Som feed, Jiddu feer, Boni fée(r)d <i>rib</i> (Sm 81)
11. <i>breast</i> ₁	<u>isam</u> (F)		<u>isan</u> id. <u>isama</u> <i>udder</i>		<u>isaangw</u> , sg. <u>iseemi</u>	KM 166: *'isangw, pl. *'iseemi vs. *'isa'amu <i>nipples</i> ; cf. pKhoe *sam <i>female breast</i> SC 283: Ma'a i'asemu; ?CCu: Aw əšew <i>heart</i> ; ?Beja ésse <i>belly</i> (Re)
<i>breast</i> ₂	dāŕeo <i>Brust</i> (D)	dá'ŕêwa <i>chest</i>			daŕawa, pl. daŕeewee <i>chest</i>	KM 78: *daŕaba; ECu: ?Som dāb <i>lap</i> , Af dābŕe <i>armpit</i> ; Beja daba <i>chest, breast</i>
12. <i>burn</i> ₁			daŕ-		daaŕ	KM 77-78: *daŕ; SC 345; ECu: Afar diyyi <i>carbon</i> , Ya daai <i>fire-</i> <i>stick</i> ; Beja di'ê <i>brand</i>
<i>burn</i> ₂	a'o- (F)		oh-	'oh <i>catch fire</i>	oh	KM 221 *'ooh; SC 294; ECu: OrW adj. o''aa-, Macha hoaa, Bor owwaa <i>warm, hot</i>
<i>burn</i> ₃				hamiis	haamiis <i>burn for</i> <i>fuel</i>	from Ir v. haam <i>be</i> <i>hot, warm</i> (KM 130)

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
13. <i>claw</i>	fuʕgono (D) foqeni (F)	fúqûno, pl. fúqéeni <i>fingernail</i>	fuqno	fuqnoo, pl. fuqeeni'	fuq(u)noo, pl. fuqeeni	KM 110: *fuqunoo; cf. *faanqu <i>hoof</i> & *fuunqaaru <i>pair of</i> <i>hooves</i> (KM 104, 110; SC 152); maybe also ECu: Rd góffan, Arb kunúf, El kúnuf <i>claw</i> , Ds kònòf <i>hoof</i>
14. <i>cloud</i> ₁		<u>hûnki</u> , pl. <u>hûnkay</u>	<u>hunki</u>	<u>huu(n)ki</u> , pl. <u>huu(n)káy</u>	<u>huunki</u> , pl. <u>huunkáy</u>	cf. Da winku < Sw wingu id.
<i>cloud</i> ₂			(tlafi <i>rain</i> <i>cloud</i>)			KM 274: *tlafiya, pl. *tlafoo; SC 214
<i>cloud</i> ₃	<u>tlaŋgu</u> (F)		<u>tlaŋgi</u> <i>fog</i>	<u>tlaangí</u> , pl. <u>tlaangú</u> <i>fog, mist</i>		KM 278: *tlaangwiya, col. *tlaangwa; SC 217: Qw tlungato <i>sky</i> ; cf. Sand tl'ung'gu <i>cloud</i> , tl'wang' <i>rain</i>
15. <i>cold</i> ₁			tsaʔ	v. tsa'	tsa'	KM 286: *tsa' adj. <i>cool</i> , *tsa'aw v. <i>become cool</i> ; SC 176: Qw tsa'u- id.; Ma'a sa'a <i>cold, wind</i>
<i>cold</i> ₂	şaqa (F)			adj. tsaaqwa	v. tsaqut	KM 292: *tsaaqwa; SC 173; cf. also Bu caqomo; Da t'ókkooome id. (SC 176)
<i>cold</i> ₃					n. xuumpaa	
16. <i>come</i> ₁	daqaw go (F)				daqaw	KM 88: *daqaw go; SC 189: Da ďakw- <i>be going</i> ; ECu *ďak- go (EC _B 51)
<i>come</i> ₂	χawe! (D)		xaw	xaw	xaw	KM 320: *xaw; SC 256: ?Ma'a -hwá'a <i>return</i>

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
<i>come</i> ₃					qwaláng!	Bu kwalê'! id. (D) ?ECu: Sam *káálèi! id. (Sm 87)
<i>come</i> ₄	hard- (F)				hardah- <i>arrive</i>	KM 82: *dah SC 164; Beja da <i>enter</i>
17. <i>die</i> ₁	gwa (D) agwa' (F)		gwa	gwaa	gwaa'	KM 123: *gwaa'; SC 263: cf. Asa gawa <i>death</i> ; Ma'a -ga <i>die</i> ECu: Som go', Ba gue
<i>die</i> ₂				qaatl	qaatl (<i>of many</i>)	KM 232: *qatl ?ECu: Som qaḍid <i>die</i> <i>out</i> or EC 49: *qal- v. <i>slaughter</i>
18. <i>dog</i> ₁	se'ái (D) se'ai (F)		seʔay	see'aay	seeaay, pl. seeaawee	KM 251: *soo'ay; SC 350
19. <i>drink</i> ₁	waha- (F)		wah-		wah	KM 313: *wah, dur. *waham SC 313: Ma'a -waha; SC _F 24: HECu *wa'- <i>water</i> (HECu 164) < ECu *waʃ- (EC _B 186)
<i>drink</i> ₂	gawa (F)					SC _F 23: Ma'a go- <i>suck</i>
20. <i>dry</i> ₁	akat, kah- (F)		kat	adj. kaahaar	adj. kaahaar	KM 169: adj. *kahar, from v. *kah; SC 242: Ma'a v. -kahí <i>dry</i> ECu: Du *kaḥ- <i>be dry</i> (Eh 128)
<i>dry</i> ₂					agee(ngw) <i>dry season</i>	KM 51: *'ageengw ECu: Som engeg-, Bo aneg-, Rd angag- v. <i>dry</i> (EC _B 169)
<i>dry</i> ₃					v. qoro'oot	SC 366, 388 KM 172: *karaḥ cf. ECu: Som qaraḥ <i>dry</i> (DSI)

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
21. <i>ear</i>	i'a (D) e'a (F)	î'a, pl. î'a'	eʔi	'ii'a, pl. 'i'a	iaa, pl. ia'	KM 156: *'ii'a; SC 289: ?Asa yot- <i>hear</i> ; Da 'eeṭit- id.; ECu: SaAf *'ayti <i>ear</i>
22. <i>earth</i> ₁	hæpe (F)	hâpe, pl. hâpu	hæpe		hæpee, pl. hæpu	KM 149: *hæpee
<i>earth</i> ₂		Go yáamu <i>country</i>	yamu <i>under,</i> <i>below,</i> <i>floor</i>	yaamu <i>land,</i> <i>ground,</i> <i>country</i>	yaamu, pl. yaamee	KM 329: *yaamu; SC 315: Qw hamuko <i>under</i> ; Da jem- <i>stay</i> <i>in a place</i>
23. <i>eat</i>	aiim (D) ʕa-im-/a'ai- (F)		ʕayim	ʕaay, dur. ʕayiim	ʕaay, dur. ʕaayiim	KM 50: *ʕag, dur. *ʕagim; SC 275: Da ʕag- id.; cf. Qw agoto; Ma'a ki'agú; Da ʕàga <i>food</i> ; EC 17: *ʕa/i/ug- <i>drink</i>
24. <i>egg</i>	qanhi (F)	qânhi, pl. qânha	qanhi	qanhi, pl. qanhaa	qanhi, pl. qanhaa	SC 253, KM 229-30: *qanaḥaa/*qana'iya; Ma'a ikokóha; Da ʕógohi; ECu *'ukaah-; Beja kuhii
25. <i>eye</i>	ila (D) ila (F)	îla, pl. îla'	ila	'ila, pl. 'ila'	ila	KM 158: *'ila, pl. 'ilaa; SC 293: Ma'a i'ílá; Da 'ila; ECu *'il- (EC _B 104); CCu *'əl-; Beja liilii
26. <i>fat</i> ₁		n. di'ʕi, pl. di'ʕay	n. diʕi	n. diʕi, pl. diʕaay	n. diʕi, pl. diʕaay	KM 99: *duʕiya; SC 165: Asa da'ara <i>heavy</i> ; Da deʕʕem- <i>be fat</i> ; ECu: Ya -dee'eu' <i>fat</i>
<i>fat</i> ₂		adj. ʕatlar			adj. ʕatlaar	KM 62: adj. *ʕatlar, from *ʕatl <i>be mature</i> , fully grown; SC 275
<i>fat</i> ₃	n. waḥna (F)			v. waḥaar n. waḥni <i>fat flesh</i>	adj. waḥaar	Al v. waḥar (M), n. waḥani, Bu waḥana <i>animal fat</i> (KM 314)

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
27. <i>feather</i>	hai (F)		hayi	hayi, pl. hayoo	hayi, pl. hayoo	SC 381: Al hayi, Bu haaya id.; Asa haya <i>feathering of arrow</i>
28. <i>fire</i>	aša, ěše (D) ahla (F)		ahla	'asla, pl. 'asloo	asla, pl. asloo	KM 61: *'asla; SC 297: Ma'a mwáhla; ?ECu: Ba elen id., HECu *eeliin- <i>sun</i> ; CCu *aläl- <i>burn</i> (Eh 81)
29. <i>fish</i>	siyyo (F)		simo	siimoo, pl. siyó	siiy-ó, pl. -odu, sgt. -omoo	< Mbugwe siyé < Bantu *túí (KM 251)
30a. <i>fly</i> ₁ n.	ba'armo (D)			pl. ba'ár, sg. baar(a)moo	ba'ár <i>flies, bees</i>	KM 67: pl. *ba'ara, sgt. *ba'ariya; SC 147: Qw pa'aliko <i>flying termite</i> ; Da pl. p'aara <i>termite</i>
<i>fly</i> ₂ n.					mitsáy <i>fire flies</i>	KM *masaasakwamo <i>small black ant</i> cf. Bu masasók (D)
<i>fly</i> ₃ n.					sluwáx <i>horsefly</i>	
30b. <i>fly</i> ₁ v.			ʕaqmit-	ʕakuut <i>jump</i>	ʕakuut, dur. ʕakwmiiit	KM 52: *ʕakuut
<i>fly</i> ₂ v.	tlemu- (F)				tlaw	KM 280: *tlaw; cf. ECu: Or ɖaab- <i>erect</i> ; SC 216
31. <i>foot / leg</i>	(h)iya'e (D) ya'a (F)	yâ'e, pl. yâ'a <i>leg</i>	yaʔe	yaa'ee, pl. ya'a' <i>foot, leg</i>	yaaee, pl. ya'a' <i>foot, leg</i>	KM 328: *yaa'ee; SC 384
32. (be) <i>full</i> ₁					v. ʕif	
(be) <i>full</i> ₂	haş-mu (F)		adj. hats	adj. haats	v. haats	KM 134: v. *hats SC 381: Qw hatsumo <i>much</i> ; ECu: Du *h/xuç- <i>full</i>

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
33. <i>give</i> ₁	hanisa (F)		hanis-, Go haris-	haniis	hariis (arch.) & haniis	KM 129-30: *hadis; SC 305
<i>give</i> ₂					qaw	KM 232: *qaw
34. <i>go / walk</i> ₁					aw	KM 63: *'aw <i>go to</i> <i>fetch</i>
<i>go / walk</i> ₂			kaw- <i>go</i> <i>to</i>		kaw <i>go to</i>	KM 174: kaw <i>go to</i> ; ECu: Som kooy-, Ba ko(i), Or kooti, Ko xoyi <i>come</i> (EC _{HL} 110)
<i>go / walk</i> ₃	tlau (F)		tlaw-		tlaw- <i>wake up,</i> <i>go</i>	KM 280: *tlaw SC 359; see <i>fly</i>
<i>go / walk</i> ₅				hi'iit	hi'iit <i>take a step,</i> <i>walk</i>	KM 136: *hi'it
35. <i>good</i> ₁	hɔ (D) hoe-ma (F)	hooḥoo	hoḥo		hoo', pl. ho'	KM 154: *hoo'; SC 302: Ma'a -ha <i>good</i>
<i>good</i> ₂				(i)qon	qoon	cf. Ir v. qoom <i>fit, be</i> <i>alike, equal</i> Al qoma'itis- <i>match</i> (SC 292-93; KM 234)
<i>good</i> ₃	ʃu (F)					
36. <i>green</i>	qansar (F)	qantsar	qantsar		qantsar	KM *qaantsar vs. *qaantsa <i>something</i> <i>wet or moist</i> ; SC 250; ECu: Som qanjid <i>halbreifer Zustand</i> (Re; Me 262)
37. <i>hair</i> ₁	sɛ'ɛa (D) <i>Haupthaar</i> se'eum (F)		se'emi	se'eemi, pl. se'eengw	se'eengw, sgt. se'eemi	SC 350; KM 247: sgt. *se'eemi, col. *se'eengw
<i>hair</i> ₂			bori <i>body</i> <i>hair</i>		boori <i>beard</i> <i>on the chin</i>	KM 75: *boora ECu: Som baar <i>hairs</i> <i>of the camel's hump</i> ; Beja bār <i>camel-hair</i>

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
38. <i>hand</i> ₁	daua (D) dawa (F)	dâwa, pl. dâba <i>arm</i>	dawa	dawa, pl. daba'	dawa, pl. dabee	KM 79: *daba; SC 162: Da ḍaḍa id.; ECu *zaab- <i>handle</i> (EC _Z 139); Beja dâbi <i>handle</i> (Re)
<i>hand</i> ₂	ṣaai (F)		tšaṣay <i>palm of hand</i>		tšaṣay, pl. tšaṣi'i <i>palm of hand, sole of foot</i>	KM 287: *tšaṣay SC 173; Qw tse'uko <i>finger nail</i> cf. Sand ts'waṭa <i>claw,</i> <i>nail</i> (Kagaya)
39. <i>head</i>	săgă (D) sege (F)	sâga, pl. sâge	saga	saga, pl. sagee	saga, pl. sagee	KM 243: *saga; SC 350; ECu: Or sagoo <i>back of head</i> ; CCu: Awngi seg <i>higher part</i> (Eh 141)
40. <i>hear</i>	χmis (D) axas- (F)		axas	'axaas	axaas, dur. axmiis	KM 64: caus. *'axas- SC 288
41. <i>heart</i>	mona (F)		muna	muuná, pl. mun(aaw)ee	muuná, pl. muunaawee	KM 210: *muuná; SC 159: Da mûna id.; ECu: Sam *mindiqar <i>intestines</i> (Sm 91); Beja mána <i>bowels,</i> <i>intestine, viscera</i> (Rp)
42. <i>horn</i>	χărmo (D) xarmo (F)		xaraṇ	xarmo, pl. xareemi'	xaarmoo, pl. xaareemi	KM 318: *xadamu / *xadaangw; SC 256: Ma'a lu- haremú / -xaremú id.
43. <i>I</i>	aní (D) ani (F)		an		aníng	KM 56: *'ana; SC 283: Ma'a ání; Da 'ányi; ECu *'an-i/-u; CCu *'an-; Beja ane id.
44. <i>kill</i> ₁	ugas (D) qasa (F)		gas-	gaas	gaas	KM 114: *gaas; SC 263: ?Ma -ga'a (cf. -ga <i>die</i>) ECu: *-gši (EC _B 167)

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
<i>kill</i> ₂					ḥaamiis	from Ir v. ḥaam <i>go far away, get lost</i> (KM 147)
<i>kill</i> ₃				slarṣaas <i>kill, extinguish</i>	slarṣaas <i>kill, extinguish, silence</i>	
<i>kill</i> ₄			tsuṣ- <i>kill animal</i>			KM 301: *tsuṣ; SC 177: Da t'uuṣ- id.
45. <i>knee</i>	guruṅgura (D) guruṅgura (F)		guruṅgura		guruṅgura, pl. guruṅgeeri	KM 122: *guruṅgunda cf. Hadza guruṅguri; SC 239: Al guruṅguda, Da gilli id.
46. <i>know</i>	xuu- (F)		xuw-	xuu'	xuu?	KM 323: *xu'; SC 333: Al, Bu xuw-
47. <i>leaf</i>	loṣo (F)		loṣi	looṣi, pl. looṣoo	looṣi, pl. looṣoo	KM 196: sgt. *looṣiya, pl. *looṣóo; SC 206: Da luṣ- <i>produce offspring</i>
48. <i>lie (down)</i>	kṣāt (D)		qat-	qaat <i>lie down, sleep</i>		KM 231: *qaat; SC 368
49. <i>liver</i>	da'ę (D) de'e (F)	dá'áye, pl. dá'áydu	da'aye		da'ayee, pl. daeedu	KM 79: *da'ayee; SC 345
50. <i>(be) long</i>	ka-tṣir (D) tler (F)	tleer, pl. tlet	tler	tleer	tleer, pl. tlet	KM 281: *tleed, pl. *tledd; SC 216: Ma'a -hlerú <i>grow up</i> ; ECu: *ḍeer- (LEC 109)
51. <i>louse</i>	itir-mo, pl. itna (F)		itirmo, pl. itna		it(i)naa <i>lice</i>	KM 167: coll. *'itaa, sgt. *'itino/*'itidimo; SC 290: Da 'ittóni, pl. 'itta; ECu: Ya intóni <i>caterpillar</i> ; CCu *int-louse; Beja taat id.

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
52. <i>man</i> ₁					ʕawa, pl. ʕawaá & ʕawang	
<i>man</i> ₂					gitla	SC 364
<i>man</i> ₃	hawāta <i>Mann</i> (D)	ḥáwāta <i>husband</i>	ḥawata <i>man, husband</i>		ḥawaata <i>male, husband</i>	KM *ḥawata; SC 299, 386: Da ḥaajo
53. <i>many</i>	yare-ma (F)		yarir		yaariit	KM 329: *yaariir
54. <i>meat</i>	<u>fu'unay</u> (D) <u>fu'unai</u> (F)		<u>fuʔuni</u>	<u>fu'ni</u> , pl. <u>fu'naay</u>	<u>fu'naay</u>	KM *fu'unay / *fu'umay < Or fooni
55. <i>moon</i>	ṣāhao (D) tl/hlahaj ^(w) (F)	hlāhajw, pl. hláhéeri	hlahaj		slaḥaangw	KM 256: *slaḥaangw, pl. *slaḥeeri; SC 212: Al hlehe = hleeḥee (M), Bu hlehej = slehej (K); Ma'a mhlíhe; ECu *leʕ/h- (EC 21)
56. <i>mountain</i> ₁	tʃoma (D) tloma (F)	tlōma, pl. tlôm'i <i>hill</i>	tloma	tlooma, pl. tlomu'	tlooma	KM 283: *tlooma; ?NOM: Maji ṭumu id. (Bd)
57. <i>mouth</i>	āfa (D) afa (F)	afa, pl. afe	afa	'afa, pl. 'afee	afa, pl. afee	KM 48: *'afa, pl. °a'i SC 281: Da 'áfo id. ECu *'af- (EC _B 23); CCu *'āf-; Beja yaf
58. <i>name</i>	uma (F)	ûma, pl. ûme	uma	'uma, pl. 'umee	uma, pl. um(?)ee	KM *'uma; SC 377; Me 333: Bu úmāgōk <i>What is your name?</i> + EC _B 139: *magʕ- <i>name</i>
59. <i>neck</i>	isaḥ (D) isa (F)		isa	'isa, pl. 'isoo	isa, pl. isoo	KM 166: *'isa; SC 283
60. <i>new</i>	aben (F)		ʕaben		ʕaben	KM 46: *ʕab, pl. *ʕaban < *ʕababan; SC 376

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
61. <i>night</i> ₁		Go amsi	amsi		amsi'	KM 55: *'amasi SC 297: Ma'a ama id. Beja amas <i>night, late evening</i>
<i>night</i> ₂	xwera (D) xwera (F)	xwéera, pl. xwéer'du	xwera	xweeraa, pl. xweer(a)du'	xweeraa, pl. xweerdu	KM 326: *xwayraa; ? < ENil *-kuari- (TLM 401)
<i>night</i> ₃					axweesoo (8–10 p.m.)	from v. *axwees <i>to talk</i> (KM 64–65)
62. <i>nose</i>	duŋga (D) duŋga' (F)	dûnga, pl. dúngáwe	dungga		duungaʔ, pl. duungiʔi	MK 310-11: *uruunga, pl. *uruunga'i; SC 192; ?ECu *ur- <i>smell</i> (EC _B 184; Me 333)
63a. <i>no</i>			hla'ay (SC 209)		aasla'áy	
63b. <i>not</i>	ma- (F)				ma+V	Ki 382; KM 205: *maw <i>leave</i> ; SC 323: ECu *ma' (EC 52)
63c. <i>not</i>					-ká	Ki 382
64. <i>one</i>	wāk (D) wak (F)		wak		wak	KM 314: *wak SC 312: Ma'a wé <i>one</i> cf. SC 311: Da wátte <i>other</i> : wáttukwe <i>one</i>
65. <i>person</i> ₁ (<i>homo</i>)	hę (D) he <i>man</i> (F)	hee	he	hee	hee	KM 135-36: *heedi, pl. *hida; SC 307, 386: *hed- > Ma'a mu-he
<i>person</i> ₂		mu (pl. of hee)	mu (pl. of he)	muu (pl. of hee)	mu (pl. of hee)	KM 209: pl. *muu <i>people, persons</i> ; SC 160: Ma'a m-mú <i>person</i> , va-mú <i>people</i> ; cf. ECu: El mó id., Arb mó(h) id., <i>man</i>
<i>person</i> ₃	emēt, imēt <i>people</i> (D)			'eemée <i>people</i>	eemeét <i>people</i>	SC 294–95: Ir imi <i>people</i> , Al imi <i>crowd</i>

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
66. <i>rain</i> ₁ n.	tuai (D) tluway (F)	tluway	tluway	tluwaay	tluuw(ay)	KM 284-85: *tlubay n. vs. *tlub- v. SC 217: Da v. luβ-; ECu *çub- <i>dip in</i> (EC 30)
<i>rain</i> ₂ n.			dom'i <i>rainy</i> <i>season</i>			KM 97: *doomu; SC 220
67. <i>red</i> ₁	da'āt (D) daʕat (F)	daʕat	daʕat		daaʕaat	KM 78: *daaʕat, from *daʕ <i>burn</i> ; SC 345
<i>red</i> ₂				dararʕaat <i>reddish</i>	dararʕaat	from Ir v. daraaʕ <i>to</i> <i>roast over the open</i> <i>fire</i>
68. <i>road</i> ₁	lohi (F)	lôhi, pl. lô(u)hu	lohi	loohi. pl. lohu'	loohi, pl. lohu	KM 195: *looh- v. <i>migrate</i> ; SC 206: Da lée id.; Qw lohis- <i>move house</i>
<i>road</i> ₂					irwa, pl. -du	Ki 508; ECu: Ge ora id.; NOM: Gonga *wor- id.
<i>road</i> ₃					duuruuxmo	from Ir v. duurux <i>drag</i>
69. <i>root</i>	deʕar (F)		deʕarmo	deeʕaar(a) mo pl. deeʕár	pl. deeʕár	KM 90-91: col. *deeʕaaru, sgt. *deeʕaarimo; SC 189: Da dǎáʕero <i>neck</i>
70. <i>round</i> ₁	(har)wer- -mu (F)		harwer- <i>go round</i>	harweer <i>go around</i>	harweer <i>encircle</i>	SC 337: ECu: Som wareer- <i>be giddy</i>
<i>round</i> ₂					gumbalala	
<i>be round</i> ₃					gwan- gwaraa'aat	KM 126: *gwan- gwaraa'at <i>be round</i>
71. <i>sand</i>	ḥasam (F)		hasaṇ		ḥasaangw, sgt. ḥasiitoʔo	KM 150: *ḥasaangw; SC 381; ECu: Som ḥaš <i>powder</i> ?Di huss <i>earth</i> SC 335: Beja ḥaš <i>sand</i> (Bd), haaš <i>earth</i> (Ro)

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
72. <i>say</i> ₁					ilaawaats	
<i>say</i> ₂					kaah	KM 169: *kaah <i>speak</i> Bu kaah (K)
<i>say</i> ₃	o- (F)		o-	'oo'	oo'	KM 219: *'oo'; SC 319: Ma'a -yo; Da joom-
<i>say</i> ₄	χoesan (D)					
73. <i>see</i> ₁	ar- (F)		ar-	'ar	ar	KM 58: *'ar; ECu: Du *'ar- <i>know</i> ; CC: Bilin ar- <i>find</i> ; Beja iraay <i>know</i> (Eh 87); NOM *'ar- <i>know</i>
<i>see</i> ₂	ġa'ao (D)					
74. <i>seed(s)</i> ₁	dahasi-ŋ (F)			dahaasiingw	dahasiingw	KM *dahas v. <i>plant</i> < v. *dah <i>move into</i>
<i>seed(s)</i> ₂				waraari, pl. waraangw	waraari, pl. waraangw	KM 315: sgt. *waraari, col. *waraangw (<i>pumpkin</i>) <i>seed(s)</i>
75. <i>sit</i> ₁	iyit (D) iutanaŋ (F)		iwit-		iwit	SC 289; KM 157: *'ibiit
76. <i>skin</i> ₁					fala, pl. faloo	KM 104: *fala; SC 150
<i>skin</i> ₂	kahari (D) kahari (F)		kahari		kahari, pl. kadu	KM 169: *kahariya, from adj. *kahar <i>dry</i>
77. <i>sleep</i> ₁ v.			gu'ut-	guu'	guu'	KM 120: *gu'; SC 239: Da giit- id.; ECu: Si got- id.
<i>sleep</i> ₂ v.	qata (F)					→ <i>lie</i>
78. <i>small</i> ₁	nina (D) nina (F)	niina, pl. niinakw	nina	niina	adj. niina, pl. niinakw	KM 217: *niinaw; SC 292: Ma'a m'inyi; ECu: El ninina, Ds nini'; Ya -ni'in
<i>small</i> ₂					v. <i>nassut</i>	Ir naasú <i>a pinch of</i>

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
79. <i>smoke</i> ₁ n.					tsaangw	KM 287: *tsaa'aas <i>shine on, give light</i> ; cf. Ir tseeŋamá <i>sunshine</i> < *tseeŋamá (KM 295)
<i>smoke</i> ₂ n.	γui (D) qui (F)		qu'i	quu'i	quui id., <i>fog</i>	KM 235: *quu' <i>emit</i> <i>smoke</i> ; SC 254; ECu n. *qayŋ- <i>smoke</i> (EC _{HL} 79)
80. <i>stand</i> ₁	sihtano (F)		sehit-		sihiit	KM 249: *sih-it-, cf. Ir v. siih- <i>erect</i> , <i>make stand</i> ; ECu: Di soh-aḏ- <i>stand</i>
81. <i>star</i>	šešeŋ (F)	tsátsée'ŋi, pl. tsátsâ'o	tsatse'i	tsatseeŋi, pl. tsatseŋ	pl. tsatsaŋ & tsitsiŋ	KM 300: *tsitsaŋiya, pl. *tsitsaŋu SC 226-27: cf. Al tsa'as- <i>give light to</i> (better *tseeŋamá <i>sunshine</i> ; KM 295), Qw sa'- <i>burn</i>
82. <i>stone</i> ₁	ṭa'á, pl. ṭsa'e (D); cf. ṭa'ano <i>Gestein</i> (D) tlaŋanu (F)	tlá'ŋâno, pl. tlá'ŋe	tlaŋano		tlaaŋano, pl. tlaaŋ-ee, -ay, cf. tlaaŋa <i>rock</i>	KM 273: *tlaaŋa; SC 359; ECu: Som ḏuŋun ~ ḏuḥun <i>flintstone</i> (Re; see Me 333); ?Beja ḏa' <i>horn</i>
<i>stone</i> ₂					tsingár <i>small sharp</i> <i>stones</i>	?CCu: Bilin dāng'wəra, Khamir dāg'wəra <i>stone</i> (Re)
83. <i>sun</i> ₁				laantá	laantá	KM 191: *lala'itu SC 203: Bu letu; ECu: Mashile latta, Ko letta, Di lašš
<i>sun</i> ₂	lo'a (D) lo'a (F)			loo'aa <i>sun, day</i> , <i>God</i>	looaa	KM 191: *lala'oo; SC 203: Ir lala'a <i>God</i> , Al lele'a <i>sun</i> ; ?ECu: Sa lelleŋ <i>day</i> , Af loŋo <i>daytime</i>
<i>sun</i> ₃	tse'āma (D)	tsée'āma	tse'ama	tseeŋamá	tseeŋamá <i>sunshine</i> , <i>midday sun</i>	KM 295: *tseeŋamá cf. KM 296: *tsiŋ <i>get burnt</i>

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
84. <i>swim</i> ₁	warḥema (F)		warahem-			SC 346: pref. *wa- & *dah-, cf. Al (redupl.) darahasu <i>fish</i> ; SC 325: cf. ECu *zak- (EC _Z 140)
<i>swim</i> ₂					tumbiim	KM 273: *tumbim
85. <i>tail</i>	ḥaiso (F)	ḥáyiso, pl. ḥáyise	ḥayso		ḥaysoo, pl. aysee	KM 151: sg. *ḥaysoo, pl. *ḥaysa'i/*ḥaysasu SC 379: Al, Bu ḥayiso
86. <i>that</i> ₁	-ga (F)	qá kuqa			qá'	Wh 59–60; Mo 90
<i>that</i> ₂		da kuda			dá'	Wh 59–60; Mo 90
<i>that</i> ₃		sing			síng	Wh 59–60; Mo 90
87. <i>this</i>	-wi// -ri/-ti (F)	m. wí/ kwí ntr. ká f. rí/tí	m. wí ntr. ka f. ti		m. -(w) í/-kwí ntr. -ká f. -rí/-tí Mo 90	SC 311, 296, 289: Al wí m. Bu ki / ti m. / f. Da 'uukwa / 'iita
88. <i>thou</i>	ku(n) (D) m. kuñ f. kiñ (F)		m. ku / f. ki		m. kuúng f. kiíng	KM 180, 175: m. *kuu, f. *kii; SC 243, 245–46: Da ku/ki; ECu obj. *ku / *ki; cf. ECu: Ds kúúni, Ar ké, El kesé; Ya 'aáčuk <i>thou</i> < *a-ki-ku; CCu acc. *k'ət; Beja bar-uuk <i>thou</i>
89. <i>tongue</i> ₁	ts'efirako (D) şifrañ (F)	tsífirañw, pl. tsiffréeri	tsifrañ	tsifraangw, pl. tsifreeri'	tsifraangw	KM 302: *tsufiraangw pl. tsufireeri; SC 196
90. <i>tooth</i> ₁	səheno (D) siḥno (F)	siḥino, pl. siḥina	səhno	siḥnoo, pl. siḥna'	siḥinoo, pl. siḥna?	KM 249: *siḥinoo SC 180:
91. <i>tree</i> ₁	ḡano, pl. ḡa'i (D) xatlno (F)	xá'āno, pl. xaa'i	xaʔano	xa'noo, pl. xaa'i'	xa'(a)no, pl. xaai	KM 320: *xa'inoo, pl. *xa'i; SC 256: Ma'a mhatú / mxatú

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
92. <i>two</i> ₁	ts'är (D) şar (F)		tsar		tsár, cf. tsadiit <i>be two</i>	KM 288: *tsada; SC 229, 386
93. <i>warm</i> ₁	axunai (F)			adj. 'axwan	adj. axwan	
<i>warm</i> ₂			v. hames-	v. hamees-	v. haam (<i>of water</i>)	KM 130–31: *haam <i>be hot</i> , *hamée <i>heat</i> ; SC 299
94. <i>water</i>	ma'ái (D) ma'ai (F)		ma#ay		ma'ay	KM 197: *ma'ay; SC 156: Ma'a ma'i; Da mà'a
95. <i>we</i>	ata (incl.) (D) aten (F)		aten		atén <i>we, us</i>	KM 62: *'atén, perhaps from *'aten-na? *ye <i>with us</i> cf. Da 'àtta (SC 282); ECu *?atin- ye (EC 11)
96. <i>what</i> ₁	amila (F)		amila		milá	KM 200: *mala; SC 158: Al mi; Qw homi; Ma'a mina; Da máka (SC 155); ECu: Or W, Bor maal, Macha, Harar maali < ECu *ma?- <i>what</i> (EC _B 146)
<i>what</i> ₂					umás	
97. <i>white</i>	awāk (D) awak (F)		ʃawakw		ʃawáak, pl. ʃawak	KM 47: *ʃabaakw, derived from *ʃab <i>new?</i> ; SC 376
98. <i>who</i>	a-he-ma (F)		ahema		heemá	SC 153: <i>he person</i> , cf. amaga <i>how many</i> : ga <i>thing</i> ; Ma'a -hamá <i>which</i>
99. <i>woman</i> ₁	ameni (D) ameni (F)	ámêni, pl. ámêna, cf. áama <i>old</i> <i>woman</i>	ameni		ʃameeni cf. aama <i>wife</i>	KM 54: *'aama <i>mother</i> ; SC 282; cf. ECu: Ds minni <i>woman</i> ; Bj ammána <i>women</i> , Si ama <i>woman</i> (EC _B 140, 25)

English	Dempwolff Fleming	Whiteley	Ehret	Maghway	MQK	etymology
<i>woman</i> ₂						KM 270: *tigay; SC 283: ?Da 'átika <i>buffalo cow</i> ; Beja tak, pl. tika <i>man</i> , takat <i>woman</i> (Re)
100. <i>yellow</i> ₁					sirraraʃaat, pl. sirʃaaten	?HECu 339: Kb šiirit <i>black and white</i> ; ?CCu *sär- <i>red</i>
<i>yellow</i> ₂	še'at (F)	tsee'at	tse'at		tseeʃaat, pl. tseeʃaaten	SC 355: Qw tsa'at- <i>white</i>
*101. <i>grass</i>	gie'o (D)		gitsemi (SC 235)	gitsiimi, pl. gitsoo	gitsoo	KM 117: *gitsoo, sgt. *gitsiimi
*102. <i>snake</i>	deišimo & daisimo (D)	dáyšâmo, pl. dâýše			dayšimo, pl. dayšee	KM 90: *daysu; SC 225; cf. NS: Koman: Koma dâašó', Twampa tašá' id. (Bd)
*103. <i>thin</i> ₁				v. nehuut	v. nehuut <i>become thin</i>	Beja nehaw <i>become thin, weak</i> (Eh 108)
<i>thin</i> ₂					v. kangaʃuut	
*104. <i>three</i>	tām (D) tam (F)			tám	tám	KM 267: *tami; SC 290: Da 'íttaantóóni <i>third day after tomorrow</i>
*105. <i>wet</i>			adj. naʃar-	adj. naaʃ	v. naaʃ cf. naaʃari <i>wet land along river</i>	KM 213: *naʃ SC 352; ECu: ?Arb ñoor <i>mud</i>
*106. <i>ye</i>	m. kuŋga (F) f. kiŋga (F)				kuungá'	KM 183: *kuungaa'i; SC 247: Ma'a kúné id. Da kuná <i>your</i> ; EC _B 173: *kun- / kin- <i>your</i> ; Beja baraakna <i>ye</i> (Re)

Wordlist II: Other South Cushitic languages

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
1. <i>all</i> ₁						
<i>all</i> ₂	slehéem	sloome	(sliiima / slaama wholeness)		-	KM 261: *sliima cf. Ir sleemee <i>also</i>
<i>all</i> ₃			gong			SC 236: Ir gan <i>very much</i> ; Da gààna <i>big</i>
<i>all</i> ₄				wataka		cf. “1”
2. <i>ashes</i> ₁	dašaraa				-	KM 78: *dašaraa; cf. ECu *darš- id. (EC 16; SC _F 21)
<i>ashes</i> ₂						
<i>ashes</i> ₃		šura	šura	wurato		KM *šura; SC 387: Ma’a i’ora
3. <i>bark</i> ₁	qafi	qafaa’i / qafari	qafira	-		KM 228: *qafiya, pl. *qafoo; SC 368; SC _F 21: CCu *qaf- id.
<i>bark</i> ₂					pa’uko	SC 143: Da pák’o
4. <i>belly</i> ₁	gura’	gura’a	gura’a	-		KM 122: *gura’a; SC 239; ECu *gur’- <i>udder</i> (EC _B 86); CCu: Awngi guriangxe <i>navel</i> (Wedekind)
<i>belly</i> ₂					a’iye	SC 387

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
5. <i>big</i> ₁	'ur	('ur in negations)			(?ulungayo wide)	KM 309-10: *'ur, cf. *'uraw <i>grow up, become adult</i> ; SC 295: Ma'a uda <i>far</i> ; ?ECu: Bj wod- <i>grow</i> (EC _{HL} 62)
<i>big</i> ₂		da(a)adir	didir	jira	dire	KM 96: *dir; SC 188: Da đar- <i>increase</i>
6. <i>bird</i> ₁	tsirfi	tsiraʃi	ciraʃa	šira'a		KM 299: *tsiraʃa SC 226; ECu: Or čirrii, HEC 27: *čiida- id.
<i>bird</i> ₂					desito	SC 386
7. <i>bite</i> ₁	kih	kih	kih		?k'a-	KM 175: *kih; SC 252: Da k'aḥ-
<i>bite</i> ₂				jalas-		SC 388
8. <i>black</i> ₁	booʃ	booʃ	booʃ			KM 74: *booʃ, pl. *boʃ; SC 388
<i>black</i> ₂				-biasa	-abesu	SC 388
<i>black</i> ₃					tulut-	SC 170: Da t́ílali <i>shadow</i>
9. <i>blood</i> ₁	tseeree	tseeree	ceedee			KM 295: *tseedee; SC 199: Da ts'iraara'e <i>red</i>
<i>blood</i> ₂						
<i>blood</i> ₃				sa'aka	sa'uko	SC 179, 386: Ma'a sakó / saxó
10. <i>bone</i>	fara	fara	fara	farit	fala'ato	KM 104-05: *fara, pl. *fararu SC 150: Ma'a ifwára id.; cf. ECu: Som feed, Jiddu feer, Boni fée(r)d <i>rib</i> (Sm 81)

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
11. <i>breast</i> ₁	<u>'isaamó</u>	<u>'isa'amu</u>	<u>'isaang</u>	<u>isank</u>		KM 166: *'isangw, pl. *'iseemi vs. *'isa'amu <i>nipples</i> ; cf. pKhoe *sam <i>female breast</i> SC 283: Ma'a i'asemu; ?CCu: Aw əšew <i>heart</i> ; ?Beja ésse <i>belly</i> (Re)
<i>breast</i> ₂ (daʕawi chest)		(daʕabi chest)				KM 78: *daʕaba; ECu: ?Som ɖab lap, Afar ɖabʕe <i>armpit</i> Beja daba <i>chest</i> , <i>breast</i>
<i>breast</i> ₃					nya'ati	SC 232, 387
12. <i>burn</i> ₁ (trans.)	daʕ	daʕ	daʕ	da'-		KM 77–78: *daʕ; SC 345; ECu: Afar diyyi <i>carbon</i> , Ya daai <i>fire-stick</i> ; Beja di'é <i>brand</i>
<i>burn</i> ₂	'ooh	'oh	'ooh			KM 221 *'ooh; SC 294; ECu: OrW adj. o''aa-, Macha hoaa, Bor owwaa <i>warm, hot</i>
<i>burn</i> ₃						from Ir v. haam <i>be hot, warm</i> (KM 130)
<i>burn</i> ₄					sa'- (tr.) sa'im- (intr.)	SC 388

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
13. <i>claw</i> ₁	fuqnó					KM 110: *fuqunoo; cf. *faanqu <i>hoof</i> & *fuunqaaru <i>pair of hooves</i> (KM 104, 110; SC 152); maybe also ECu: Rd góffan, Arb kunúf, El kúnuf <i>claw</i> , Ds kònòf <i>hoof</i>
<i>claw</i> ₂		tsarafu	carafu			KM 292: *tsarafu; SC 329: CCu: Awngi tsefir
<i>claw</i> ₃				senget		SC 387
<i>claw</i> ₄					tse'uko (tsa'amuko <i>hand</i>)	SC 173; KM 287: *tsaʕay > IrGo tsaʕay Al daba-tsaʕay Bu daba-caʕay <i>palm of hand</i> ; cf. Sandawe ts'waʔa <i>claw, nail</i> (Kagaya)
14. <i>cloud</i> ₁						cf. Da winku < Sw wingu id.
<i>cloud</i> ₂	tlafi	tlafi	tlaafimo			KM 274: *tlaʕiya, pl. *tlafoo; SC 214
<i>cloud</i> ₃	(tlangú <i>fog</i> , tlangwi <i>misty</i> <i>cloud</i>)	(tloonga <i>fog</i>)	tlongiya, pl. tloonga		tlungawa	KM 278: *tlaangwiya, col. *tlaangwa; SC 217: Qw tlungato <i>sky</i> ; cf. Sand tl'ung'gu <i>cloud</i> , tl'wang' <i>rain</i>
<i>cloud</i> ₄				buʕurita		SC 387

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
15. <i>cold</i> ₁	(tsa'uw <i>become cool</i>)		(ca'u <i>wind</i> , <i>cool breeze</i>)		tsa'u	KM 286: *tsa' adj. <i>cool</i> , *tsa'aw v. <i>become cool</i> ; SC 176: Ma'a sa'a <i>cold, wind</i>
<i>cold</i> ₂	tsaaqwa	tsaaqwa	caaqwa	šo'ok		KM 292: *tsaaqwa; SC 173; cf. also Bu caqomo; Da t'ókkoome id. (SC 176)
<i>cold</i> ₃						
16. <i>come</i> ₁	daqaw					KM 88: *daqaw <i>go</i> : Bj ɖaɖab- <i>arrive</i> ; SC 189: Da ɖakw- <i>be going</i> ; ECu *ɖak- <i>go</i> (EC _B 51)
<i>come</i> ₂	xaw	xaw	xaw			KM 320: *xaw; SC 256: ?Ma'a -hwá'a <i>return</i>
<i>come</i> ₃						Bu kwalè'! id. (D) ?ECu: Sam *káálèi! id. (Sm 87)
<i>come</i> ₄	(dah <i>enter</i>)	(dah <i>arrive</i>)	(dah <i>arrive</i>)	dah-	dah-	KM 82: *dah SC 164; Beja da <i>enter</i>
17. <i>die</i> ₁	gwaa'	gwaa'	gwaa'	ga-	gwa'-	KM 123: *gwaa'; SC 263: cf. Asa gawa <i>death</i> ; Ma'a -ga <i>die</i> ECu: Som go', Ba gue
<i>die</i> ₂		(qatl <i>be</i> <i>finished</i>)	(qatlis <i>finish</i> <i>completely</i>)			KM 232: *qatl ?ECu: Som qaðid <i>die out</i> or EC 49: *qal- v. <i>slaughter</i>

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
18. <i>dog</i> ₁	soo'ay				(sa'aku <i>wild dog</i>)	KM 251: *soo'ay; SC 350
<i>dog</i> ₂		gwiḥira	gwehera			KM 127–29: *gwiḥira, from *gwiḥ to <i>bark</i> > Bu guḥ id.
<i>dog</i> ₃				kite		SC 385-86: < Chaga
<i>dog</i> ₄					ka'uko	SC 385-86: < Sand kaka
19. <i>drink</i> ₁	wah	(wah {cattle only}; waha <i>drinking</i>)	waham (wah {cattle only}; waha <i>drinking</i>)			KM 313: *wah, dur. *waham SC 313: Ma'a -waha; SC _F 24: HECu *wa' - <i>water</i> (HECu 164) < ECu *waṣ- (EC _B 186)
<i>drink</i> ₂						SC _F 23: Ma'a go- <i>suck</i>
<i>drink</i> ₃		kitah	kitah			KM 178: *kitah
<i>drink</i> ₄				wat-	wat-	SC 383: with *wah
20. <i>dry</i> ₁	kaahar v. kah	kahar v. kah	v. kah			KM 169: adj. *kahar, from v. *kah; SC 242: Ma'a v. -kahí <i>dry</i> ECu: Du *kah- <i>be</i> <i>dry</i> (Eh 128)
<i>dry</i> ₂	(<i>'ageengw</i> <i>dry season</i>)	(<i>'egee dry</i> <i>season</i>)	(<i>'ageeng</i> <i>dry season</i>)			KM 51: *'ageengw ECu: Som engeg-, Bo aneg-, Rd angag- v. <i>dry</i> (EC _B 169)

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
<i>dry</i> ₃		karaḥ <i>be dry & hard</i>	karaḥadi karaḥ <i>be dry & hard</i>		kalahayi	SC 366, 388 KM 172: *karaḥ cf. ECu: Som qaraḥ <i>dry</i> (DSI)
<i>dry</i> ₄		xala'				SC 388: Ma'a -hala'e
<i>dry</i> ₅				-rakaš		SC 388
21. <i>ear</i>	'ii'a	'ee'a	'ee'a	?yatara	?wato	KM 156: *'ii'a; SC 289: ?Asa yot- <i>hear</i> ; Da 'eetiṭ- id.; ECu: SaAf *'ayti <i>ear</i>
22. <i>earth</i> ₁	ḥapee	ḥapee	ḥapee			KM 149: *ḥapee
<i>earth</i> ₂	yaamu	yaamu	yaamu			KM 329: *yaamu; SC 315: Qw hamuko <i>under</i> ; Da jem- <i>stay</i> <i>in a place</i>
<i>earth</i> ₃				hajat		cf. <i>sand</i>
<i>earth</i> ₄					sa'amuko	SC 387
23. <i>eat</i>	ṣag	ṣag	ṣag	'agim-	ag-	KM 50: *ṣag, dur. *ṣagim; SC 275: Da ṣag- id.; cf. Qw agoto; Ma'a ki'agú; Da ṣāga <i>food</i> ; EC 17: *ṣa/i/ug- <i>drink</i>
24. <i>egg</i>	qan'i	qana'i	qana'iya	-	?kaketo	SC 253, KM 229–30: *qanaḥaa/*qana'iya; Ma'a ikokóha; Da ṣógohi; ECu *'ukaah-; Beja kuhii

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
25. <i>eye</i>	'ila	'ila	'ila	'ilat	ilito	KM 158: *'ila, pl. 'ilaa; SC 293: Ma'a i'ilá; Da 'ila; ECu *'il- (EC _B 104); CCu *'əl-; Beja lilili
26. <i>fat</i> ₁	diŋi	duŋi	duŋiya			KM 99: *duŋiya; SC 165: Asa da'ara <i>heavy</i> ; Da deŋŋem- <i>be fat</i> ; ECu: Ya -dee'eu' <i>fat</i>
<i>fat</i> ₂						KM 62: adj. *ŋatlar, from *ŋatl <i>be mature</i> , fully grown; SC 275
<i>fat</i> ₃		waḥana	waḥana			Al v. waḥar (M), n. waḥani, Bu waḥana <i>animal fat</i> (KM 314)
<i>fat</i> ₄				'ore'ek		SC 298: Ma'a mweré
<i>fat</i> ₅					ahlito	SC 285: Da áli
27. <i>feather</i> ₁	hayi	haayi	haaya	(haya <i>feathering of arrow</i>)	-	KM 134-35: *haaya, pl. *hayaa; SC 381
<i>feather</i> ₂				se'emuk		SC 386
28. <i>fire</i> ₁	'asla	'asla	'asla			KM 61: *'asla; SC 297: Ma'a mwáhla; ?ECu: Ba elen id., HECu *eeliin- <i>sun</i> ; CCu *aläl- <i>burn</i> (Eh 81)
<i>fire</i> ₂				yogot		SC 318: Da 'èèga; cf. Ir 'akwesi, Go 'akesi <i>hearth-stone</i> (KM 52) ECu *'eeg- (EC _{HL} 62)
<i>fire</i> ₃					xa'o	SC 387; cf. <i>tree</i>

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
29. <i>fish</i> ₁	<u>siyó</u>					< Mbugwe siyé < Bantu *túí (KM 251)
<i>fish</i> ₂		<u>samaaki</u>	<u>samaaki</u>			
<i>fish</i> ₃		daraḥasu				SC 386
<i>fish</i> ₄				<u>singiri</u>		SC 385–86: < Maasai
<i>fish</i> ₅					tsumayi	SC 194, 386
30a. <i>fly</i> ₁ n.	ba'ár	ba'ara	ba'ara		-	KM 67: pl. *ba'ara, sgt. *ba'ariya; SC 147: Qw pa'aliko <i>flying termite</i> ; Da pl. p'aara <i>termite</i>
<i>fly</i> ₂ n.						KM *masaasakwamo <i>small black ant</i> cf. Bu mašasók (D)
<i>fly</i> ₃ n.						
<i>fly</i> ₄ n.		(tikaṣi <i>tsetse fly</i>)	(tikaṣiya <i>tsetse fly</i>)	ṣike'e		SC 169; KM 271: *tikaṣiya
30b. <i>fly</i> ₁ v.	ṣakuut					KM 52: *ṣakuut
<i>fly</i> ₂ v.	tlaw	tlaw	tlaw			KM 280: *tlaw; cf. ECu: Or ḍaab- <i>erect</i> ; SC 216
<i>fly</i> ₃ v.		tso'ot	jo'od	ji'it- <i>fly</i> , <i>jump</i>		KM 301: *tso'ot; SC 353
<i>fly</i> ₄ v.			tlaṣas- <i>fly</i> , <i>jump</i>			SC 215
<i>fly</i> ₅ v.					tsal-	SC 388
31. <i>foot / leg</i>	yaa'ee	yaa'ee	yaa'ee	ye'e	ya'o	KM 328: *yaa'ee; SC 384

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
32. (be) <i>full</i> ₁						
(be) <i>full</i> ₂	hats v.	hats v.	hac- v.	haš v.	-	KM 134: v. *hats SC 381: Qw hatsumo <i>much</i> ; ECu: Du *h/xuɕ- <i>full</i>
33. <i>give</i> ₁	hariis	haris	hadis			KM 129–30: *hadis; SC 305
<i>give</i> ₂	(qaw <i>graze</i>)		qaw			KM 232: *qaw
<i>give</i> ₃				nge <i>give</i> !		SC 388
<i>give</i> ₄					ahem-	SC 388: cf. Da hee'-?
<i>give</i> ₅					lo'-	SC 388
34. <i>go / walk</i> ₁	'aw <i>go to</i> <i>fetch</i>	'aw <i>go to</i> <i>fetch</i>	'aw <i>go to</i> <i>fetch</i>			KM 63: *'aw <i>go</i> <i>to fetch</i>
<i>go / walk</i> ₂		kaw <i>go to</i>	kaw <i>go to</i>			KM 174: kaw <i>go to</i> ; ECu: Som kooy-, Ba ko(i), Or kooti, Ko xoyi <i>come</i> (EC _{HL} 110)
<i>go / walk</i> ₃					ttag-	SC 359
<i>go / walk</i> ₄		ha`ut				SC 388: cf. Da haš- <i>come</i>
<i>go / walk</i> ₅	hi`iit					KM 136: *hi`it; ?ECu: Arb `i`it-, El iit- <i>walk</i>
<i>go / walk</i> ₆		xots	xoc			KM 323: *xots
<i>go / walk</i> ₇				nde <i>go</i> !		SC 388
35. <i>good</i> ₁	ho'	ho'	ho'			KM 154: *hoo'; SC 302: Ma'a -ha <i>good</i>

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
<i>good</i> ₂						cf. Ir v. qoom <i>fit</i> , <i>be alike</i> , <i>equal</i> Al qoma'itis- <i>match</i> (SC 292-93; KM 234)
<i>good</i> ₃						
<i>good</i> ₄		boŋot				SC 388
<i>good</i> ₅				-'ila	a'ela	SC 284–85, 388
36. <i>green</i> ₁	qaantsaar	qaantsar	qaancar		qandza	KM *qaantsar vs. *qaantsa <i>something</i> <i>wet or moist</i> ; SC 250; ECu: Som qanjid <i>halbreifer Zustand</i> (Re; Me 262)
<i>green</i> ₂				-jareta		SC 354, 388
<i>green</i> ₃					tsalam-	SC 354, 388
37. <i>hair</i> ₁	se'eengw			se'emuk <i>hair</i> , <i>feathers</i>	sa'amayo <i>body &</i> <i>limb hair</i>	SC 350; KM 247: sgt. *se'eemi, col. *se'eengw
<i>hair</i> ₂			(boora <i>goat's beard</i>)			KM 75: *boora ECu: Som baar <i>hairs</i> <i>of the camel's</i> <i>hump</i> ; Beja bār <i>camel-</i> <i>hair</i>
<i>hair</i> ₃		quubu	quubu			KM 235: *quubu
<i>hair</i> ₄					tsatamuko	SC 386
38. <i>hand</i> ₁	dawa	daba	daba			KM 79: *daba; SC 162: Da ḍaḍa id.; ECu *zaab- <i>handle</i> (EC _Z 139); Beja dábi <i>handle</i> (Re)

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
<i>hand</i> ₂	(tsaʕay <i>palm of hand or foot</i>)	(dabatsaʕay <i>palm of hand</i>)	(daba-caʕay <i>palm of hand</i>)			KM 287: *tsaʕay SC 173; Qw tse'uko <i>finger nail</i> cf. Sand ts'waʔa <i>claw, nail</i> (Kagaya)
<i>hand</i> ₃				mongok		SC 160: ?Da miggi
<i>hand</i> ₄					mudza'ikuto	SC 387
39. <i>head</i>	saga	saga	saga	sogok	sagiko	KM 243: *saga; SC 350; ECu: Or sagoo <i>back of head</i> ; CCu: Aw seg <i>higher part</i> (Eh 141)
40. <i>hear</i> ₁	'axaas	'axas	'axas	has-		KM 64: caus. *'axas- SC 288
<i>hear</i> ₂		('iitiimis <i>listen to</i>)	('ititis <i>listen to</i>)	yot-		SC 388: Da 'eeṭiṭ- id. KM 167: *'ititis
<i>hear</i> ₃					kekem-	SC 388: Ma'a -ko id.?
41. <i>heart</i>	muuná	muuna	muuna	monok	munako	KM 210: *muuná; SC 159: Da muna id.; ECu: Sam *minḍiqar <i>intestines</i> (Sm 91); Beja mána <i>bowels, intestine, viscera</i> (Rp)
42. <i>horn</i>	xarmó	xarimoo	xadaang	hadonk	xalinko	KM 318: *xadamu / *xadaangw; SC 256: Ma'a lu- haremú / -xaremú id.

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
43. <i>I</i>	'aning	'ana	'ana	(-ana <i>my</i>)	-	KM 56: *'ana; SC 283: Ma'a ání; Da 'ányi; ECu *'an-i/-u; CCu *'an-; Beja ane id.
44. <i>kill</i> ₁	gaas	gaas	gaas	gas	ga'is	KM 114: *gaas; SC 263: ?Ma -ga'a (cf. -ga <i>die</i>) ECu: *-gši (EC _B 167)
<i>kill</i> ₂						from Ir v. ḥaam <i>go far away, get lost</i> < *ḥaam (KM 147)
<i>kill</i> ₃						
<i>kill</i> ₄	tsuuṣ	tsuṣ	cuṣ			KM 301: *tsuṣ; SC 177: Da t'uuṣ- id.
45. <i>knee</i>	guruungura'	guruguunda	guruguunda	ṅuluēt	kungulu'iya	KM 122: *guruguunda cf. Hadza gurunguri; SC 239: Al gurunguda, Da gilli id.
46. <i>know</i> ₁	xu'	xu'	xu'			KM 323: *xu'; SC 333: Al, Bu xuw-
<i>know</i> ₂				šah-		SC 388
<i>know</i> ₃					balat-	SC 135, 388: Da bar-
47. <i>leaf</i> ₁	looṣi	looṣi	looṣiya		-	KM 196: sgt. *looṣiya, pl. *looṣóo; SC 206: Da luṣ- <i>produce offspring</i>
<i>leaf</i> ₂				debiya		SC 190: Da dēḃere <i>greens</i>

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
48. <i>lie (down)</i>	qaat	qaat	qaat	'at-	k'at-	KM 231: *qaat; SC 368
49. <i>liver</i> ₁	da'ayee	da'ayee	da'ayee	?dowo		KM 79: *da'ayee; SC 345
<i>liver</i> ₂					dangalayito	SC 387
50. <i>(be) long</i> ₁	tleer	tleer	tleed			KM 281: *tleed, pl. *tledd; SC 216: Ma'a – hlerú <i>grow up</i> ; ECu: *qeer- (LEC 109)
<i>long</i> ₂				-jada		SC 386
<i>long</i> ₃					ba'ati	SC 386
51. <i>louse</i> ₁	'itnó	'itinoo	'itinoo	pl. 'ita		KM 167: coll. *'itaa, sgt. *'itinoo/*'itidimo; SC 290: Da 'ittóni, pl. 'itta; ECu: Ya intóni <i>caterpillar</i> ; CCu *int- <i>louse</i> ; Beja taat id.
<i>louse</i> ₂					daliko	SC 386
52. <i>man</i> ₁						
<i>man</i> ₂						
<i>man</i> ₃	ḥawaata	ḥawata	ḥawata	hatuk		KM *ḥawata; SC 299, 386: Da ḥaajo
<i>man</i> ₄					walatuko	SC 386
53. <i>many</i>	yaariir					KM 329: *yaariir
		naʃ				SC 386
			waʃa			SC 386: wa'a
				-ša'i		SC 229, 386: cf. Ma'a -ša <i>very</i> (<i>much</i>)

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
					hatsumo <i>much</i>	KM 134: v. *hats SC 381; ECu: Du *h/xuɕ- <i>full</i>
54. <i>meat</i> ₁	<u>fu'unay</u>	<u>fu'umay</u>	<u>fu'umay</u>			KM *fu'unay / *fu'umay < Or fooni
<i>meat</i> ₂				'aga		SC 386; cf. <i>eat</i>
<i>meat</i> ₃					taxelato	SC 349, 386
55. <i>moon</i>	sleheengw	slehee	sleheeng	lehek	hlahayiko	KM 256: *slaḥaangw, pl. *slaḥeeri; SC 212: Ma'a mhlīhe; ECu *leɕ/h- (EC 21)
56. <i>mountain</i> ₁	tlooma	(tlooma <i>temple</i>)	(tlooma <i>temple</i>)			KM 283: *tlooma; ?NOM: Maji ɬumu id. (Bd)
<i>mountain</i> ₂	(daanda <i>back</i>)	daanda	(daanda <i>back</i>)			KM 86: *daanda; SC 329; cf. ECu: Or randa <i>slope</i> or Sand dzàndzà <i>middle back</i>
<i>mountain</i> ₃			'oong, pl. omeri		onko, pl. óom (Claus)	SC 276: Da aɲilá <i>up, above</i>
<i>mountain</i> ₄				de'ok	(du'ama <i>hill</i>)	cf. stone (SC 221, 359)
<i>mountain</i> ₅					lingiyo	SC 387: Ma'a longori
57. <i>mouth</i>	'afa	'afa	'afa	'afok	afuko	KM 48: *'afa, pl. 'a'i SC 281: Da 'áfo id. ECu *'af- (EC _B 23); CCu *'áf-; Beja yaf

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
58. <i>name</i> ₁	'uma	'uma	'uma	'imok		KM *'uma; SC 377; Me 333: Bu úmāgōk <i>What is your name?</i> + EC _B 139: *magɣ- <i>name</i>
<i>name</i> ₂					solongayo	SC 387
59. <i>neck</i> ₁	'isa	'isa	'isa	isat	isito	KM 166: *'isa; SC 283
<i>neck</i> ₂				<u>mirut</u>		SC 387
60. <i>new</i> ₁	ʃab	ʃab	ʃab	'amba		KM 46: *ʃab, pl. *ʃaban < *ʃababan; SC 376
<i>new</i> ₂					ko'of-	SC 388
61. <i>night</i> ₁	'amsi	'amasi	'amasi		(amasiya <i>tomorrow</i>)	KM 55: *'amasi SC 297: Ma'a ama id. Beja amas <i>night</i> , <i>late evening</i>
<i>night</i> ₂		(xwayróo <i>work done in the evening</i>)				KM 326: *xwayraa; ? < ENil *-kuari- (TLM 401)
<i>night</i> ₃						from Ir v. axwees <i>to talk</i>
<i>night</i> ₄				eramesa		SC 387
<i>night</i> ₅					baliko	KM *baloo <i>day (24 hours)</i> ; SC 134: Qw balitiko <i>day before yesterday / after tomorrow</i>
62. <i>nose</i>	duunga'	'uruungi	'uruunga	iringa	?ningwato	MK 310–11: *uruunga, pl. *uruunga'i SC 192 ?ECu *ur- <i>smell</i> (EC _B 184; Me 333)

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
63a. <i>no</i>	-	-	-	-	-	
63b. <i>not</i> <i>imper.</i>	ma+V	maarée+V	maw+V			SC 323: ECu *ma' (EC 52)
63c. <i>not</i>	V-káng					(Ki 382)
63d. <i>not</i>		V-basl	V-basli			cf. Ir -wasl <i>without</i> < *basli (KM 72)
64. <i>one</i> ₁	wak	wak	(wak <i>other</i>)	(?wataka <i>all</i>)		KM 314: *wak SC 312: Ma'a wé <i>one</i> cf. SC 311: Da wátte <i>other</i> : wáttukwe <i>one</i>
<i>one</i> ₂			leyiing			
<i>one</i> ₃				kinde (also <i>alone; man</i>)		SC 244, 364
<i>one</i> ₄					be'a	SC 136: Ma'a bí <i>only</i> cf. AlBu *bi'itee <i>other</i> (KM 74)
65. <i>person</i> ₁ (<i>homo</i>)	hee	hiru/hiiru	heedi	'iduk	hilako (pl. me'iko)	KM 135-36: *heedi, pl. *hida; SC 307, 386: *hed- > Ma'a mu-he
<i>person</i> ₂	muu					KM 209: pl. *muu <i>people, persons</i> ; SC 160: Ma'a m-mú <i>person</i> , va-mú <i>people</i> ; cf. ECu: El mó id., Arb mó(h) id., <i>man</i>
<i>person</i> ₃		(imi <i>crowd</i>)				SC 294–95

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
66. <i>rain</i> ₁ n.	tluway	tlubay	tlubay		v. tlub-	KM 284-85: *tlubay n. vs. *tlub- v. SC 217: Da v. luβ-; ?ECu *cub- <i>dip in</i> (EC 30)
<i>rain</i> ₂ n.	(doomu <i>period of rains</i>)			(do'omok <i>year</i>)		KM 97: *doomu; SC 220
<i>rain</i> ₃ n.				mijok		SC 387
<i>rain</i> ₄ n.					hubuko	SC 387
67. <i>red</i> ₁	daaʃaat	daaʃat	daaʃad			KM 78: *daaʃat, from *daʃ <i>burn</i> ; SC 345
<i>red</i> ₂						from Ir v. daraaʃ <i>to roast over the open fire</i>
<i>red</i> ₃				-huma		SC 388
<i>red</i> ₄				-dili'i		SC 346: Qw deles- <i>yellow</i> ; Ir delo <i>day</i>
<i>red</i> ₅					dimayi-	SC 325: ECu: Or diima, Saho <i>duma</i> id.
68. <i>road</i> ₁						KM 195: *looh- v. <i>migrate</i> ; SC 206: Da lée id.; Qw lohis- <i>move house</i>
<i>road</i> ₂	'urwaa					Ki 508; ECu: Ge ora id.; NOM: Gongga *wor- id.
<i>road</i> ₃						from Ir v. duurux <i>drag</i>
<i>road</i> ₄	('amoo <i>where</i>)	'amoo	'amoo			KM 56: *'amoo
<i>road</i> ₅				šimut		SC 387
<i>road</i> ₆					k'ilayko	SC 387

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
69. <i>root</i> ₁	deefaarmó pl. deefár	deefaarimo			dala'uko	KM 90-91: col. *deefaaru, sgt. *deefaarimo; SC 189: Da dǎǎŋero <i>neck</i>
<i>root</i> ₂	(gamuungw <i>bottom</i>)	(gamaa <i>trunk of tree</i>)	gama			KM 113: *gama/u
<i>root</i> ₃				mogengera		SC 386
70. <i>round</i> ₁	-	-	-	-		SC 337: ECu: Som wareer- <i>be giddy</i>
<i>be round</i> ₃		?giringirit	gwangwaraa'ad			KM 126: v. *gwangwaraa'at
<i>round</i> ₄	-	-	-	-	balani-	SC 321: ECu: Som buur- <i>make round</i>
71. <i>sand</i> ₁	ḥasaangw		col. ḥasoo (K) (sgt. ḥasiya <i>barren ground</i>)	hajāt	hasinko	KM 150: *ḥasaangw; SC 381; ECu: Som ḥaš <i>powder</i> ?Di huss <i>earth</i> SC 335: Beja ḥaš <i>sand</i> (Bd), haaš <i>earth</i> (Ro)
<i>sand</i> ₂		tipa s., <i>clay</i>	(tipa <i>clay</i>)			KM 271: *tipa <i>covering with earth</i>
<i>sand</i> ₃		seeḥináy	seeḥinay			KM 247: AlBu *seeḥináy; cf. ECu: Ts šumáh-to (Hy)
72. <i>say</i> ₁						
<i>say</i> ₂	(kaah <i>speak</i>)					KM 169: *kaah <i>speak</i> Bu kaah (K)

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
<i>say</i> ₃	'oo'	'oo'	'oo'		om-	KM 219: *'oo'; SC 318: Ma'a -yo; Da joom-
<i>say</i> ₄						
<i>say</i> ₅		gimbus-	gimbus-			cf. KM 116: *giimba <i>speech, language</i> SC 237, 388: Ma'a gimbé <i>conversation</i>
<i>say</i> ₆				šah-		SC 388
73. <i>see</i> ₁	'ar	'ar	'ar	'adam-		KM 58: *'ar; ECu: Du *'ar- <i>know</i> ; CC: Bilin ar- <i>find</i> ; Beja iraay <i>know</i> (Eh 87); NOM *'ar- <i>know</i>
<i>see</i> ₂						
<i>see</i> ₃					gal-	SC 235: Ma'a -galí <i>try</i>
74. <i>seed(s)</i> ₁	-	dahasi		-	-	KM *dahas v. <i>plant</i> < v. *dah <i>move</i> <i>into</i>
<i>seed(s)</i> ₂	(waraangw col. waraari sgt. <i>pumpkin</i> <i>seed(s)</i>)					KM 315: sgt. *waraari, col. *waraangw (<i>pumpkin</i>) <i>seed(s)</i>
<i>seed(s)</i> ₃		pisakari, col. pisakaroo	pisagaroo, col. pisagariya			KM 225: *pisakariya, col. pisakaroo; SC 161
75. <i>sit</i> ₁	'iwiit	'ibiit	'ibiid			SC 289; KM 157: *'ibiit
<i>sit</i> ₂				'amim-	-	SC 388

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
76. <i>skin</i> ₁	(fala <i>hide</i> , <i>prepared skin</i>)	fala	fala	(fulo <i>hide</i>)		KM 104: *fala; SC 150
<i>skin</i> ₂	kaahari (<i>dried skin</i>)	ka(h)ari / kaahari	(kaariya <i>sheep's hide</i>)	-		KM 169: *kahariya, from adj. *kahar <i>dry</i>
<i>skin</i> ₃					tseo	SC 386
77. <i>sleep</i> ₁ v.	gu'	gu'	gu'			KM 120: *gu'; SC 239: Da giit- id.; ECu: Si got- id.
<i>sleep</i> ₂ v.						
<i>sleep</i> ₃ v.				ra'-		SC 388
<i>sleep</i> ₄ v.					tsum-	SC 388
78. <i>small</i> ₁	niinaw	niina			-nanana	KM 217: *niinaw; SC 292: Ma'a m'inyi; ECu: El ninina, Ds nini; Ya -ni'in
<i>small</i> ₂						Ir naasú <i>a pinch of</i>
<i>small</i> ₃			cokoŋ			SC 386: koko
<i>small</i> ₄				'ara		SC 386
79. <i>smoke</i> ₁ n.	(tseeŋamá <i>sunshine</i>)					KM 287: *tsaa'aas <i>shine on, give light</i> ; cf. Ir tseeŋamá <i>sunshine</i> < *tseeŋamá (KM 295)
<i>smoke</i> ₂ n.	quu'i	quu'u				KM 235: *quu' <i>emit smoke</i> ; SC 254; ECu n. *qayŋ- <i>smoke</i> (EC _{HL} 79)
<i>smoke</i> ₃ n.			'eħa			SC 387
<i>smoke</i> ₄ n.				to'usayok		SC 387
<i>smoke</i> ₅ n.					selemuko	SC 387

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
80. <i>stand</i> ₁	sihiit				-	KM 249: *sih-it-, cf. Ir v. siih- <i>erect</i> , <i>make stand</i> ; ECu: Di soh-aḍ- <i>stand</i>
<i>stand</i> ₂		qarit	qadid			KM 227: *qad-it, from *qad <i>be</i> <i>erect</i> ; SC 388
<i>stand</i> ₃				hut-		SC 388
81. <i>star</i> ₁	tsatseeṣi	titsaṣi	ticaṣu		?sasa'amo	KM 300: *tsitsaṣiya, pl. *tsitsaṣu SC 226-27: cf. Al tsa'as- <i>give light to</i> (better *tseeṣamá <i>sunshine</i> ; KM 295), Qw sa'- <i>burn</i>
<i>star</i> ₂				'alalaya		SC 368, 387
82. <i>stone</i> ₁	tlaaṣa	tlaaṣa	tlaaṣa	?de'ok	tlayiko	KM 273: *tlaaṣa; SC 359; ECu: Som ḍuṣun ~ ḍuḥun <i>flintstone</i> (Re; see Me 333); ?Beja ḍa' <i>horn</i>
<i>stone</i> ₂						?CCu: Bilin däng ^w əra, Khamir dæg ^w əra <i>stone</i> (Re)
83. <i>sun</i> _{1/2}			leetu			KM 191: *lala'itu SC 203: Bu letu; ECu: Mashile latta, Ko letta, Di lašš
<i>sun</i> ₂	loo'aa / lele'aa / lala'aa	lala'aa	?leetu < sgl. *lala'itu			KM 191: *lala'oo; SC 203: Ir lala'a <i>God</i> , Al lele'a <i>sun</i> ; ?ECu: Sa lelleṣ <i>day</i> , Af loṣo <i>daytime</i>

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
<i>sun</i> ₃						cf. v. Ir tsiĩŋ <i>highest</i> <i>temperature</i> < *tsiĩŋ <i>be scorched, get</i> <i>burnt</i> (KM 296)
<i>sun</i> ₄				'ajet (<i>'ajota day</i>)	aso	SC 284: Ma'a i'azé id., ma'azé <i>day</i>
84. <i>swim</i> ₁						SC 346: pref. *wa- & *daḥ-, cf. Al (redupl.) darahasu <i>fish</i> ; SC 325: cf. ECu *zak- (ECz 140)
<i>swim</i> ₂	tuumbiim	tumbucim ^M	-	-	-	KM 273: *tuumbim (without Al)
85. <i>tail</i>	ḥaysoo	ḥaysoo	ḥaysoo	hesa	hayisowa	KM 151: sg. *ḥaysoo, pl. *ḥaysa'i/*ḥaysasu SC 379: Al, Bu ḥayiso
86. <i>that</i> ₁	-	qó		-	-	Wh 59–60; Z 509
86. <i>that</i> ₄			ka'a / ta'a hika'a m. / hata'a f.			Wh 59–60; K 89 SC 296, 289: Ma'a ka
87. <i>this</i> ₁	-	m. wí f. tí	m. kí f. tí	-	-	Wh 59–60; SC 311, 296, 289: Da 'uukwa / 'iiṭa
<i>this</i> ₂		hee / he	ha / hi hing m./ hang f.			KM 135: *hee; from *heedi <i>person</i>

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
88. <i>thou</i>	kúung m. kiing f.	kuu m. kii f.	'ugu m. 'igi f.	-ku <i>thy</i>	-ku <i>thy</i>	KM 180, 175: m. *kuu, f. *kii; SC 243, 245–46: Da ku/ki; ECu obj. *ku /*ki; cf. ECu: Ds kúúni, Ar ké, El kesé; Ya 'aáčuk <i>thou</i> < *'a-ki-ku; CCu acc. *kʷət; Beja bar-uuk <i>thou</i>
89. <i>tongue</i> ₁	tsifraangw	tsufiraa	cufaraang	šeferank		KM 302: *tsufiraangw pl. tsufireeri; SC 196
<i>tongue</i> ₂					ondalimo	SC 274: Ma'a lu'ánda Da šééna
90. <i>tooth</i> ₁	sihnó	sihinoo				KM 249: *sihinoo; SC 180
<i>tooth</i> ₂	(šaantlinó <i>molar tooth</i>)	(šaantlimoo <i>molar tooth</i>)	šaatlimo			KM 58: *šaantlimo / *šaantlinoo
<i>tooth</i> ₃				liga	ihlikuko	SC 292: Ma'a i'ike
91. <i>tree</i> ₁	xa'anó	xa'imoo	xa'imo			KM 320: *xa'inoo, pl. *xa'i; SC 256: Ma'a mhatú / mxatú
<i>tree</i> ₂				kašij		SC 386
<i>tree</i> ₃					tša'unko	SC 386
92. <i>two</i> ₁	tsár	njad	cada		(sa'aleko <i>twins</i>)	KM 288: *tsada; SC 229, 386
<i>two</i> ₂				hlam		SC 208: ?Da líima
<i>two</i> ₃					mbaéa	Claus 1910; cf. AlBu *bi'itee <i>other</i> (KM 74) SC 136: Ma'a bí <i>only</i>

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
93. <i>warm</i> ₁						
<i>warm</i> ₂	-	v. haam	v. haam	-	-	KM 130-31: *haam <i>be hot</i> , *hamée <i>heat</i> ; SC 299
94. <i>water</i>	ma'ay	ma'ay	ma'ay	ma'a	ma'aya	KM 197: *ma'ay; SC 156: Ma'a ma'í; Da mà'a
95. <i>we</i> ₁	'atén					KM 62: *'atén, perhaps from *'aten-na? *ye <i>with us</i> cf. Da 'átta (SC 282); ECu: *?atin- ye (EC 11)
<i>we</i> ₂		haandaa'	daandiray	-	-(V)ne <i>our</i>	KM 132: *haanta/i perhaps related to Ma'a níne <i>we</i> , kanu <i>our</i> ; Da n(y)ányi, bound -ni (SC 184, 284); ECu: Bj naanu; Ya níini' <i>we</i>
96. <i>what</i> ₁	-	melee	mala	-	?homi	KM 200: *mala; SC 158: Al mi; Qw homi; Ma'a mina; Da máka (SC 155); ECu: Or W, Bor maal, Macha, Harar maali < ECu *ma?- <i>what</i> (EC _B 146)
<i>what</i> ₂						

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
97. <i>white</i> ₁	ʕawaak	ʕabaakw	ʕabaakw	ʔabaka	-abakwe	KM 47: *ʕabaakw, derived from *ʕab <i>new?</i> ; SC 376
<i>white</i> ₂					tʂaʔati	SC 388
98. <i>who</i> ₁	-			-	-	SC 153: Ir he <i>person</i> , cf. amaga <i>how many</i> : ga <i>thing</i> ; Maʔa -hamá <i>which</i>
<i>who</i> _{2/1}		miya	miyaa			KM 208: *miyaa; SC 158
99. <i>woman</i> ₁	(ʔaamaa <i>old woman</i>)	(ʔaama <i>aunt</i>)	(ʔama <i>mother</i>)	(ʔamaʔeto <i>older girl</i> , ʔamama <i>grandmother</i>)	(ama <i>mother</i>)	KM 54: *ʔaama <i>mother</i> ; SC 282; cf. ECu: Ds minni <i>woman</i> ; Bj ammana <i>women</i> , Si ama <i>woman</i> (EC _B 140, 25)
<i>women</i> ₂	tiyay	tikay	tigay			KM 270: *tigay; SC 283: ʔDa ʔatika <i>buffalo cow</i> ; Beja tak, pl. tika <i>man</i> , takat <i>woman</i> (Re)
<i>woman</i> ₃	haree	haree	hadde			KM 129: *hadde; SC 300: Maʔa hará <i>calf</i>
<i>woman</i> ₄				mayito		SC 386
<i>woman</i> ₅					wadzo	SC 386
100. <i>yellow</i> ₁						?HECu 339: Kb šiirit <i>black and white</i> ; ?CCu *sär- <i>red</i>
<i>yellow</i> ₂	-	-		-	(tʂaʔati <i>white</i>)	SC 355

English	Gorowa	Alagwa	Burunge	Asa	Qwadza	etymology
d. source	[KM]	[KM]	[KM]	[SC]	[SC]	
<i>yellow</i> ₃		qaantsar	qaancar			KM 230: *qaantsar <i>green, blue, yellow</i>
<i>yellow</i> ₄			ya'ada'adi			SC 388
<i>yellow</i> ₅				(-dili'i <i>red</i>)	deles-	SC 346: Ir delo <i>day</i>
*101. <i>grass</i>	gitsoo, sgt. gitsiimi					KM 117: *gitsoo, sgt. *gitsiimi
*102. <i>snake</i>		deesu	deesu			KM 90: *daysu; SC 225; cf. NS: Koman: Koma dáášó', Twampa tašá' id. (Bd)
*103. <i>thin</i> ₁						Beja nehaw <i>become</i> <i>thin, weak</i> (Eh 108)
*104. <i>three</i> ₁	tám	tam	tami		tami	KM 267: *tami; SC 290: Da 'íttaantóóni <i>third</i> <i>day after tomorrow</i>
*105. <i>wet</i>	naaŋ	naŋ				KM 213: *naŋ SC 352; ECu: ?Arb ñoor <i>mud</i>
*106. <i>ye</i> ₁	kuungá'					KM 183: *kuungaa'i; SC 247: Ma'a kúné id. Da kuná <i>your</i> ; EC _B 173: *kun- / *kin- <i>your</i> ; Beja barakna <i>ye</i> (Re)
<i>ye</i> ₂	(-húng <i>your</i>)	huunguraa'	'uunkuray			Ki 290, KM 144–45: *huunku(-ra)

Abbreviations

AA Afroasiatic, Af Afar (Parker & Hayward 1985), Al Alagwa, Arb Arbore (Hayward 1984), Aw Awngi (Hetzron 1978), Ba Bayso (Hayward 1979a / Haberland & Lamberti 1988), Bd Bender 1971, Bj Burji (Sasse 1982), Bo Boni (Heine 1982), Bor Borana (Stroemer 1995), Bu Burunge, C Central, col. collective, Cu Cushitic, d. dominant, D Dempwolff, Da Dahalo (Ehret 1980 / Tosco 1991), Di Dirayta (Black 1974), Ds Dasanech (Sasse 1974), Du Dullay (Amborn, Minker & Sasse 1980), dur. durative, E East, EC East Cushitic (Sasse 1979), EC_B East Cushitic (Sasse 1982), EC_{HL} (Haberland & Lamberti 1988), Eh Ehret 1987, El Elmolo (Heine 1980), F Fleming 1971, Ge Gedeo (Hudson 1989), Gg Gollango (AMS), Go Gorowa, Hd Hadiyya (Hudson 1989), HECu Highland East Cushitic (Hudson 1989), Hy Hayward, Ir Iraqw, Ji Jiddu (Heine 1978 / Banti & Ibraw 1996), K Kiessling (1994), Kb Kambatta (Hudson 1989), Ki Kiessling (2002), KM Kiessling & Mous (2003), Ko Konso (Black), LEC Lowland East Cushitic (Black 1974), lw. loanword, M Mous (1990), Me Meihof (1906), miss. missing, MK Mous & Kiessling, Mo Mous (1992), N North, Nil Nilotic, Om Omotic, Or Oromo (see Bor), OrW Oromo of Wellega (Gragg 1982), Qw Qwadza, Rd Rendille (Pillinger & Galboran 1999), Re Reinisch (1890, 1895, 1902), Ro Roper (1928), S South, Sa Saho (Welmers 1952), Sand Sandawe (Kagaya 1993), SC South Cushitic data of Ehret (1980), SC_F South Cushitic data of Fleming (1969), sgt. singulative, Si Sidamo (Hudson 1989), Sm Sam (Heine 1978), Som Somali, Sw Swahili, TLM Teso-Lotuka-Masai (Vossen 1982), Ts Tsamay (Amborn, Minker & Sasse 1980; Hayward 1989), Wh Whiteley (1958), Ya Yaaku (Heine 1976), Z Zaborski (1984–86).

Statistics of loanwords and missing items

Iraqw: lw.:## 14 cloud, 29 fish, 54 meat; miss.: ## 0. Σ 3.

Gorowa: lw.: ## 11 breast, 29 fish, 54 meat; miss.: ## 70 round, 74 seed, 86 that, 8 this, 93 warm, 96 what, 98 who, 100 yellow. Σ 11.

Alagwa: lw.: ## 11 breast, 54 meat. Σ 2.

Burunge: lw.: ## 11 breast, 29 fish, 54 meat; miss.: # 84 swim. Σ 4.

Asa: lw.: 11 breast, 18 dog, 29 fish; miss.: 3 bark, 4 belly, 24 egg, 43/2 I, 63 not, 70 round, 74 seed, 76 skin, 84 swim, 86 that, 87 this, 93 warm, 95 we, 96 what, 98 who, 100 yellow. Σ 17,5.

Qwadza: lw.: ## 14 cloud, 18 dog; miss.: 1 all, 2 ashes, 27 feather, 30 fly n., 32 full, 43 I, 47 leaf, 63 not, 74 seed, 75 sit, 80 stand, 84 swim, 86 that, 87 this, 93 warm, 95/2 we, 98 who. Σ 18,5.

Statistics of cognates

Iraqw + Gorowa: 87/88 = 0.9886

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 88, 89, 90, 91, 92, 94, 95, 97.

Iraqw + Alagwa: 81/97 = 0.8350

1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 38, 29, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 55, 57, 58, 59, 60, 61, 62, 63/2, 64, 65, 66, 67, 69, ?70, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 87, 88, 89, 90, 91, 92, 93, 94, 95/2, 96, 97, 98/2.

Iraqw + Burunge: 75.5/95 = 0.7947 // 80.5/95 = 0.8474

3, 4, 5, 6, 7, 8, 9, 10, 12, *13, 15, 16, 17, *18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 55, *56, 57, 58, 59, 60, 61, 62, 63/2, 65, 66, 67, 70, 71, 72, 73, 75, 76, 77, *79, 81, 82, 83, 85, 87, 88, 89, *90, 91, 92, 93, 94, 95/2, 96, 97, 98/2.

Iraqw + Asa: 37/80.5 = 0.4596

5, 6, 10, 12, 15, 16, 17, 19/2, ?21, 23, 25, 31, 32, 37, 39, 40, 41, 42, 43/2, 44, 45, 48, ?49, 51, 52, 55, 57, 58, 59, 60, 62, 65, 71, 73, ?82, 85, 88/2, 94, 95/2, 96/2, 97.

Iraqw + Qwadza: 32.5/79.5 = 0.4088

5, ?7, 10, 15, 16, 17, 19/2, 20, ?21, 23, ?24, 25, 31, 36, 39, 41, 42, 44, 45, 48, 55, 57, 59, ?62, 65, 66, 69, 71, 72, ?81, 82, 85, 88/2, 94, 95/2, 96/2, 97.

Gorowa + Alagwa: 77/89 = 0.8652

1, 3, 4, 6, 7, 8, 9, 10, 12, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 55, 57, 58, 59, 60, 61, 62, 63/2, 64, 65, 66, 67, 69, 72, 73, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 88, 89, 90, 91, 92, 94, 95/2, 97, 99.

Gorowa + Burunge: 70/88 = 0.7954 // 75/88 = 0.8522

3, 4, 6, 7, 8, 9, 10, 12, *13, 14, 15, 16, 17, *18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 55, *56, 57, 58, 59, 60, 61, 62, 63/2, 65, 66, 67, 71, 72, 73, 75, 77, *79, 81, 82, 83, 85, 88, 89, *90, 91, 92, 94, 95/2, 97, 99.

Gorowa + Asa: 34/81.5 = 0.4172

6, 10, 12, 15, 17, ?19, ?21, 23, 25, 31, 32, 37, 39, 40, 41, 42, 43/2, 44, 45, 48, 49/2, 52, 55, 57, 58, 59, 60, 62, 65, 71, 73, ?82, 85, 88/2, 89, 94, 97.

Gorowa + Qwadza: 30/77.5 = 0.3871

?7, 10, 17, ?21, 23, ?24, 25, 31, 36, 37, 39, 41, 42, 44, 45, 48, 55, 57, 59, ?62, 65, 66, 69, 71, 72, 78, ?81, 82, 85, 88/2, 94, 95/2, 96/2, 97.

Alagwa + Burunge: 85.5/96 = 0.8906 // 87.5/96 = 0.9114

2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 55, 57, 58, 59, 60, 61, 62, 63, 65, 66, 67, 68, ?70, 72, 73, 74, 75, 76, 77, *79, 80, 81, 82, 83, 85, 87, 88, 89, *90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

Alagwa + Asa: 34.5/81.5 = 0.4233

2, 5, 6, 10, 12, 15, 17, ?21, 23, 25, 31, 32, 39, 40, 41, 42, 43/2, 44, 45, 48, ?49, 51, 52, 55, 57, 58, 59, 60, 62, 65, 73, ?82, 85, 88/2, 89, 94, 97.

Alagwa + Qwadza: 30/79.5 = 0.3774

5, ?7, 10/17, 20, ?21, 23, ?24, 25, 31, 36, 39, 41, 42, 44, 45, 48, 55, 57, 59, ?62, 65, 66, 69, 72, 78, ?81, 82, 85, 88/2, 94, 95/2, 96/2, 97.

Burunge + Asa: 35.5/81.5 = 0.4356

2, 5, 6, 10, 12, 15, 17, ?21, 23, 25, 31, 32, 39, 40, 41, 42, 43/2, 44, 45, 48, ?49, 51, 52, 55, 57, 58, 59, 60, 62, 65, 71, 73, ?82, 85, 88/2, 89, 94, 97.

Burunge + Qwadza: 28/78.5 = 0.3569

5, ?7, 10, 17, ?19, 20, ?21, 23, ?24, 25, 31, 36, 39, 41, 42, 45, 48, 55, 56, 57, ?62, 65, 66, 71, 72, ?81, 82, 85, 88/2, 94, 96/2, 97.

Asa + Qwadza: 30/74 = 0.4054

5, 8, 9, 10, 16, 17, 20, ?21, 23, 25, 31, 35, 37, 39, 41, 42, 44, 45, 48, 55, 57, 59, ?62, 65, 71, ?82, 83, 95, 88/2, 90, 94, 97.

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